

SEQUENCE LISTING

<110> MUNROE, Donald G.  
KAMBOJ, Rajender  
PETERS, Diana  
KOOSHESH, Fatemeh  
VYAS, Tejal B.  
GUPTA, Ashwani K.

<120> IDENTIFICATION OF LYSOLIPID RECEPTORS INVOLVED IN INFLAMMATORY RESPONSE

<130> 8074-8021

<140> 09/222,995

<141> 1998-12-30

<150> 60/109,885

<151> 1998-11-25

<150> 60/080,610

<151> 1998-04-03

<150> 60/070,185

<151> 1997-12-30

<160> 25

<170> PatentIn Ver. 2.1

<210> 1

<211> 35

<212> DNA

<213> Rattus sp.

<400> 1

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<210> 2

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic primer

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<400> 2  
attataccaa ggagacgctg gaaac

25

<210> 3  
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<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
primer

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agagagcaag gtattggcta cgaag

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<210> 4  
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<223> Description of Artificial Sequence: synthetic  
primer

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<220>  
<223> Description of Artificial Sequence: synthetic  
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<210> 6  
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DNA Sequence Database

<220>  
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primer

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26

<210> 7  
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<212> DNA  
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<223> Description of Artificial Sequence: synthetic  
primer

<400> 7  
gcattcacaa gaaattactc tgaggc

26

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<220>  
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primer

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34

<210> 9  
<211> 37  
<212> DNA  
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<220>  
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primer

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tatatatcta gacattcaca agaaattact ctgaggc

37

<210> 10

<211> 32  
<212> DNA  
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<223> Description of Artificial Sequence: synthetic primer

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<210> 11  
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<212> DNA  
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<220>  
<223> Description of Artificial Sequence: synthetic primer

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<210> 12  
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<212> DNA  
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<223> Description of Artificial Sequence: synthetic primer

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<210> 13  
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<212> DNA  
<213> Homo sapiens

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cctgaacccc aacaagggtcc aggaacacta taattatacc aaggagacgc tggaaacgca 120  
ggagacgacc tcccgccagg tggcctcgcc attcatcgtc atccctgtt gcgcattgt 180  
ggtgaaaaac cttctggtgc tcattgcgtt ggcccgaaac agcaagttcc actcggaat 240

gtacctgttt ctggcaacc tggccgcctc cgatctactg gcagggcgtgg cttcgtagc 300  
caataccttgc tctcttgct ctgtcacgct gaggctgacg cctgtcagt gtttgccc 360  
ggacggctcg cttcatcac gctctcgcc tctgtcttca gcctcctggc catgccatt 420  
gagcgcacg tggccatgc aaagg 445

<210> 14  
<211> 364  
<212> DNA  
<213> Homo sapiens

<400> 14  
aaagccccat ggccccagca ggcctctgag ccccaccatg ggcagcttgt actcgagta 60  
cctgaacccc aacaagggtcc aggaacacta taattatacc aaggagacgc tggaaacgca 120  
ggagacgacc tcccggcagg tggcctcgcc ttcatcgtc atcctctgtt ggcattgt 180  
ggtgaaaac ctctggtgc tcattgcgtt ggcggaaac agcaagttcc actcggaat 240  
gtacctgttt ctggcaacc tggccgcctc cgatctactg gcagggcgtgg cttcgtagc 300  
caataccttgc tctcttgct ctgtcacgct gaggctgacg cctgtcagt gtttgccc 360  
ggac 364

<210> 15  
<211> 369  
<212> DNA  
<213> Homo sapiens

<400> 15  
agttctgaaa gccccatggc cccagcagggc ctctgagccc caccatggc agcttgtact 60  
cgaggatctt gaaccccaac aagggtccagg aacactataa ttataccaag gagacgctgg 120  
aaacgcagga gacgacccctcc cgccaggtgg gtcggcctt catcgatc ctctgttgcg 180  
ccattgttgtt ggaaaacccctt ctggtgctca ttgcgggtggc ccgaaacagc aagttccact 240  
cgccaatgtt cctgtttctg ggcaacctgg ccgcctccga tctactggca ggcgtggctt 300  
cgttagccaat accttgctct ctggctctgt cacgctgagg ctgacgcctg tgcagtggtt 360  
tgcccgaaa 369

<210> 16  
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<212> DNA  
<213> Homo sapiens

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<221> CDS  
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Met Gly Ser Leu Tyr Ser

gag tac ctg aac ccc aac aag gtc cag gaa cac tat aat tat acc aag 103  
 Glu Tyr Leu Asn Pro Asn Lys Val Gln Glu His Tyr Asn Tyr Thr Lys  
 10 15 20

gag acg ctg gaa acg cag gag acg acc tcc cgc cag gtg gcc tcg gcc 151  
 Glu Thr Leu Glu Thr Gln Glu Thr Ser Arg Gln Val Ala Ser Ala  
 25 30 35

ttc atc gtc atc ctc tgt tgc gcc att gtg gtg gaa aac ctt ctg gtg 199  
 Phe Ile Val Ile Leu Cys Cys Ala Ile Val Val Glu Asn Leu Leu Val  
 40 45 50

ctc att gcg gtg gcc cga aac agc aag ttc cac tcg gca atg tac ctg 247  
 Leu Ile Ala Val Ala Arg Asn Ser Lys Phe His Ser Ala Met Tyr Leu  
 55 60 65 70

ttt ctg ggc aac ctg gcc tcc gat cta ctg gca ggc gtg gcc ttc 295  
 Phe Leu Gly Asn Leu Ala Ser Asp Leu Leu Ala Gly Val Ala Phe  
 75 80 85

gta gcc aat acc ttg ctc tct ggc tct gtc acg ctg agg ctg acg cct 343  
 Val Ala Asn Thr Leu Leu Ser Gly Ser Val Thr Leu Arg Leu Thr Pro  
 90 95 100

gtg cag tgg ttt gcc cgg gag ggc tct gcc ttc atc acg ctc tcg gcc 391  
 Val Gln Trp Phe Ala Arg Glu Gly Ser Ala Phe Ile Thr Leu Ser Ala  
 105 110 115

tct gtc ttc agc ctc ctg gcc atc gcc att gag cgc cac gtg gcc att 439  
 Ser Val Phe Ser Leu Leu Ala Ile Ala Ile Glu Arg His Val Ala Ile  
 120 125 130

gcc aag gtc aag ctg tat ggc agc gac aag agc tgc cgc atg ctt ctg 487  
 Ala Lys Val Lys Leu Tyr Gly Ser Asp Lys Ser Cys Arg Met Leu Leu  
 135 140 145 150

ctc atc ggg gcc tcg tgg ctc atc tcg ctg gtc ctc ggt ggc ctg ccc 535  
 Leu Ile Gly Ala Ser Trp Leu Ile Ser Leu Val Leu Gly Gly Leu Pro  
 155 160 165

atc ctt ggc tgg aac tgc ctg ggc cac ctc gag gcc tgc tcc act gtc 583  
 Ile Leu Gly Trp Asn Cys Leu Gly His Leu Glu Ala Cys Ser Thr Val  
 170 175 180

ctg cct ctc tac gcc aag cat tat gtg ctg tgc gtg gtg acc atc ttc 631  
 Leu Pro Leu Tyr Ala Lys His Tyr Val Leu Cys Val Val Thr Ile Phe

185

190

195

tcc atc atc ctg ttg gcc atc gtg gcc ctg tac gtg cgc atc tac tgc 679  
 Ser Ile Ile Leu Leu Ala Ile Val Ala Leu Tyr Val Arg Ile Tyr Cys  
 200 205 210

gtg gtc cgc tca agc cac gct gac atg gcc gcc ccg cag acg cta gcc 727  
 Val Val Arg Ser Ser His Ala Asp Met Ala Ala Pro Gln Thr Leu Ala  
 215 220 225 230

ctg ctc aag acg gtc acc atc gtg cta ggc gtc ttt atc gtc tgc tgg 775  
 Leu Leu Lys Thr Val Thr Ile Val Leu Gly Val Phe Ile Val Cys Trp  
 235 240 245

ctg ccc gcc ttc agc atc ctc ctt ctg gac tat gcc tgt ccc gtc cac 823  
 Leu Pro Ala Phe Ser Ile Leu Leu Leu Asp Tyr Ala Cys Pro Val His  
 250 255 260

tcc tgc ccg atc ctc tac aaa gcc cac tac ytt ttc gcc gtc tcc acc 871  
 Ser Cys Pro Ile Leu Tyr Lys Ala His Tyr Xaa Phe Ala Val Ser Thr  
 265 270 275

ctg aat tcc ctg ctc aac ccc gtc atc tac acg tgg cgc agc cgg gac 919  
 Leu Asn Ser Leu Leu Asn Pro Val Ile Tyr Thr Trp Arg Ser Arg Asp  
 280 285 290

ctg cgg cgg gag gtg ctt cgg ccg ctg cag tgc tgg cgg ccg ggg gtg 967  
 Leu Arg Arg Glu Val Leu Arg Pro Leu Gln Cys Trp Arg Pro Gly Val  
 295 300 305 310

ggg gtg caa gga cgg agg cgg ggc ggg acc ccg ggc cac cac ctc ctg 1015  
 Gly Val Gln Gly Arg Arg Arg Gly Gly Thr Pro Gly His His Leu Leu  
 315 320 325

cca ctc cgc agc tcc agc tcc ctg gag agg ggc atg cac atg ccc acg 1063  
 Pro Leu Arg Ser Ser Ser Leu Glu Arg Gly Met His Met Pro Thr  
 330 335 340

tca ccc acg ttt ctg gag ggc aac acg gtg gtc tgagggtggg ggtggaccaa 1116  
 Ser Pro Thr Phe Leu Glu Gly Asn Thr Val Val  
 345 350

caaccaggcc agggcatagg ggttcatgga aaggccactg ggtgacccca aata 1170

<210> 17

<211> 353

<212> PRT

<213> Homo sapiens

<400> 17

Met Gly Ser Leu Tyr Ser Glu Tyr Leu Asn Pro Asn Lys Val Gln Glu  
1 5 10 15

His Tyr Asn Tyr Thr Lys Glu Thr Leu Glu Thr Gln Glu Thr Thr Ser  
20 25 30

Arg Gln Val Ala Ser Ala Phe Ile Val Ile Leu Cys Cys Ala Ile Val  
35 40 45

Val Glu Asn Leu Leu Val Leu Ile Ala Val Ala Arg Asn Ser Lys Phe  
50 55 60

His Ser Ala Met Tyr Leu Phe Leu Gly Asn Leu Ala Ala Ser Asp Leu  
65 70 75 80

Leu Ala Gly Val Ala Phe Val Ala Asn Thr Leu Leu Ser Gly Ser Val  
85 90 95

Thr Leu Arg Leu Thr Pro Val Gln Trp Phe Ala Arg Glu Gly Ser Ala  
100 105 110

Phe Ile Thr Leu Ser Ala Ser Val Phe Ser Leu Leu Ala Ile Ala Ile  
115 120 125

Glu Arg His Val Ala Ile Ala Lys Val Lys Leu Tyr Gly Ser Asp Lys  
130 135 140

Ser Cys Arg Met Leu Leu Ile Gly Ala Ser Trp Leu Ile Ser Leu  
145 150 155 160

Val Leu Gly Gly Leu Pro Ile Leu Gly Trp Asn Cys Leu Gly His Leu  
165 170 175

Glu Ala Cys Ser Thr Val Leu Pro Leu Tyr Ala Lys His Tyr Val Leu  
180 185 190

Cys Val Val Thr Ile Phe Ser Ile Ile Leu Leu Ala Ile Val Ala Leu  
195 200 205

Tyr Val Arg Ile Tyr Cys Val Val Arg Ser Ser His Ala Asp Met Ala  
210 215 220

Ala Pro Gln Thr Leu Ala Leu Leu Lys Thr Val Thr Ile Val Leu Gly  
225 230 235 240

Val Phe Ile Val Cys Trp Leu Pro Ala Phe Ser Ile Leu Leu Leu Asp  
245 250 255

Tyr Ala Cys Pro Val His Ser Cys Pro Ile Leu Tyr Lys Ala His Tyr  
260 265 270

Xaa Phe Ala Val Ser Thr Leu Asn Ser Leu Leu Asn Pro Val Ile Tyr  
275 280 285

Thr Trp Arg Ser Arg Asp Leu Arg Arg Glu Val Leu Arg Pro Leu Gln  
290 295 300

Cys Trp Arg Pro Gly Val Gly Val Gln Gly Arg Arg Arg Gly Gly Thr  
305 310 315 320

Pro Gly His His Leu Leu Pro Leu Arg Ser Ser Ser Ser Leu Glu Arg  
325 330 335

Gly Met His Met Pro Thr Ser Pro Thr Phe Leu Glu Gly Asn Thr Val  
340 345 350

Val

<210> 18  
<211> 1170  
<212> DNA  
<213> Homo sapiens

<400> 18  
tttcgggtta ccgggtcggt cccgagactc ggggtggta cccgtcaaca tgagcctcat 60  
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cctctgctgg agggcggtcc accggagccg gaagtagcag taggagacaa cgcggttaaca 180  
ccaccttttgcg agaacccacg agtaacgcca ccgggtttgcg tggtcaagg tgagccgtta 240  
catggacaaa gaccgttgg accggcgag gctagatgac ctggccgcacc ggaagcatcg 300  
gttatggAAC gagagaccga gacagtgcga ctccgactgc ggacacgtca ccaaacgggc 360  
cctcccgaga cgaaagttagt gcgagagccg gagacagaag tcggaggacc ggtacggta 420  
actcgccgtg caccgttaac gttccagtt cgacataccg tcgctttct cgacggcgta 480  
cgaagacgag tagccccggta gcaccgtta gagcgtaccgg gagccaccgg acgggttagga 540  
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cgtaatacac gacacgcacc actggtagaa gaggttagtag gacaaccggt agcaccggga 660  
catgcacgcg tagatgacgc accaggcgag ttccgtgcga ctgtaccggc gggcgctctg 720  
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gccaaggatcg taggaggaag acctgatacg gacaggcgag gtgaggacgg gcttaggat 840  
gttcgggtg atgraaaaagc ggcagaggta ggacttaagg gacgagttgg ggcagtagat 900  
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cccccacccc cacgttctg cctccgcccc gccctggggc ccgggtggagg aggacggta 1020  
ggcgtcgagg tcgagggacc tctccccgt a cgtgtacggg tgca gttgggt gaaaagacct 1080  
cccggtgtgc caccagactc ccacccac ctgggttgg gtccggtccc gtatccccaa 1140  
gtacccccc ggtgaccac tggggttat 1170

<210> 19  
<211> 1062  
<212> DNA  
<213> Homo sapiens

<400> 19  
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accaaggaga cgctggaaac gcaggagacg acctccgc aggtggcc tc ggccttc atc 120  
gtcatccctct gttgc cccat tttgggtggaa aaccccttctgg tgctcattgc ggtggcccg 180  
aacagcaagt tccactcgac aatgtacctg tttctggca acctggccgc ctccgatcta 240  
ctggcaggcg tggccttcgt agccaatacc ttgctctctg gctctgtcac gctgaggctg 300  
acgcctgtgc agtggtttgc cggggaggc tc tgc cttca tc acgc tctc ggcctctgtc 360  
ttcagcctcc tggccatcgc cattgagcgc cacgtggca ttgccaaggta caagctgtat 420  
ggcagc gaca agagctgccc catgcttctg ctcatcgggg cctcgtggct catctcgctg 480  
gtcctcggtg gcctgccc at cttggctgg aactgcctgg gacaccc tgc gctcc 540  
actgtcctgc ctctctacgc caagcattat gtgctgtcgc tttgtgaccat ct tccatc 600  
atccctgttgg cctgtacgtg cgc atctact gctgtggcc tc aaggccac 660  
gctgacatgg cccggccca gacgctagcc ctgctcaaga cggta cccat cgtgcttaggc 720  
gtctttatcg tctgctggct gcccgccttc agcatcctcc ttctggacta tgcctgtccc 780  
gtccactctt gcccgcattt ctacaaagcc cactacctt tc gccgtctc caccctgaat 840  
tccctgctca accccgtcat ctacacgtgg cgcagccggg acctgcggcg ggagggtgtt 900  
cgccgcgtgc agtgctggcg gcccgggtg ggggtgcaag gacggaggcg gggccggacc 960  
ccggccacc acctcctgcc actccgcagc tccagctccc tggagagggg catgcacatg 1020  
cccacgtcac ccacgttctt ggaggcaac acgggtgtct ga 1062

<210> 20  
<211> 1062  
<212> DNA  
<213> Homo sapiens

<400> 20  
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cagtaggaga caacgcggta acaccacctt ttggaaagacc acgagtaacg ccaccggct 180  
ttgtcgttca aggtgagccg ttacatggac aaagacccgt tggaccggcg gaggcttagat 240  
gaccgtccgc accggaagca tcggatgg aacgagagac cgagacagt cgactccgac 300  
tgccgacacg tcaccaaacg gcccctcccg agacggaaatg tggcgagag ccggagacag 360  
aagtccggagg accggtagcg gtaactcgcg gtgcacccgt aacggttcca gttcgacata 420  
ccgtcgctgt tctcgacggc gtacgaagac gagtagcccc ggagcaccga gttagagcgac 480  
caggagccac cggacgggtta ggaaccgacc ttgacggacc cgggtggagct ccggacgagg 540  
tgacaggacg gagagatgcg gttcgtaata cacgacacgc accactggta gaagaggttag 600

taggacaacc ggcagcaccc ggacatgcac gcgttagatga cgaccaggc gagttcggtg 660  
cgactgtacc ggcggggcgt ctgcgatcg gacgagttct gccagtggta gcacgatccg 720  
cagaaatagc agacgaccga cggcggaag tcgttaggagg aagacctgat acggacaggg 780  
caggtgagga cgggctagga gatgttcgg gtgatggaaa agccgcagag gtgggactta 840  
agggacgagt tggggcagta gatgtgcacc gcgtcgcccc tggacgcccgc cctccacgaa 900  
gccggcgacg tcacgaccgc cggcccccac ccccacgttc ctgcctccgc cccgcctgg 960  
ggcccggtgg tggaggacgg tgaggcgtcg aggtcgaggg acctctcccc gtacgtgtac 1020  
gggtgcagtg ggtgcaaaga cctccgttg tgccaccaga ct 1062

<210> 21  
<211> 352  
<212> PRT  
<213> Rattus sp.

<400> 21  
Met Gly Gly Leu Tyr Ser Glu Tyr Leu Asn Pro Glu Lys Val Gln Glu  
1 5 10 15

His Tyr Asn Tyr Thr Lys Glu Thr Leu Asp Met Gln Glu Thr Pro Ser  
20 25 30

Arg Lys Val Ala Ser Ala Phe Ile Ile Ile Leu Cys Cys Ala Ile Val  
35 40 45

Val Glu Asn Leu Leu Val Leu Ile Ala Val Ala Arg Asn Ser Lys Phe  
50 55 60

His Ser Ala Met Tyr Leu Phe Leu Gly Asn Leu Ala Ala Ser Asp Leu  
65 70 75 80

Leu Ala Gly Val Ala Phe Val Ala Asn Thr Leu Leu Ser Gly Pro Val  
85 90 95

Thr Leu Ser Leu Thr Pro Leu Gln Trp Phe Ala Arg Glu Gly Ser Ala  
100 105 110

Phe Ile Thr Leu Ser Ala Ser Val Phe Ser Leu Leu Ala Ile Ala Ile  
115 120 125

Glu Arg Gln Val Ala Ile Ala Lys Val Lys Leu Tyr Gly Ser Asp Lys  
130 135 140

Ser Cys Arg Met Leu Met Leu Ile Gly Ala Ser Trp Leu Ile Ser Leu  
145 150 155 160

Ile Leu Gly Gly Leu Pro Ile Leu Gly Trp Asn Cys Leu Asp His Leu  
165 170 175

Glu Ala Cys Ser Thr Val Leu Pro Leu Tyr Ala Lys His Tyr Val Leu  
180 185 190

Cys Val Val Thr Ile Phe Ser Val Ile Leu Leu Ala Ile Val Ala Leu  
195 200 205

Tyr Val Arg Ile Tyr Phe Val Val Arg Ser Ser His Ala Asp Val Ala  
210 215 220

Gly Pro Gln Thr Leu Ala Leu Leu Lys Thr Val Thr Ile Val Leu Gly  
225 230 235 240

Val Phe Ile Ile Cys Trp Leu Pro Ala Phe Ser Ile Leu Leu Leu Asp  
245 250 255

Ser Thr Cys Pro Val Arg Ala Cys Pro Val Leu Tyr Lys Ala His Tyr  
260 265 270

Phe Phe Ala Phe Ala Thr Leu Asn Ser Leu Leu Asn Pro Val Ile Tyr  
275 280 285

Thr Trp Arg Ser Arg Asp Leu Arg Arg Glu Val Leu Arg Pro Leu Leu  
290 295 300

Cys Trp Arg Gln Gly Lys Gly Ala Thr Gly Arg Arg Gly Gly Asn Pro  
305 310 315 320

Gly His Arg Leu Leu Pro Leu Arg Ser Ser Ser Ser Leu Glu Arg Gly  
325 330 335

Leu His Met Pro Thr Ser Pro Thr Phe Leu Glu Gly Asn Thr Val Val  
340 345 350

<210> 22  
<211> 353  
<212> PRT  
<213> Homo sapiens

<400> 22  
Met Gly Ser Leu Tyr Ser Glu Tyr Leu Asn Pro Asn Lys Val Gln Glu  
1 5 10 15

His Tyr Asn Tyr Thr Lys Glu Thr Leu Glu Thr Gln Glu Thr Thr Ser

20

25

30

Arg Gln Val Ala Ser Ala Phe Ile Val Ile Leu Cys Cys Ala Ile Val  
 35                    40                    45

Val Glu Asn Leu Leu Val Leu Ile Ala Val Ala Arg Asn Ser Lys Phe  
 50                    55                    60

His Ser Ala Met Tyr Leu Phe Leu Gly Asn Leu Ala Ala Ser Asp Leu  
 65                    70                    75                    80

Leu Ala Gly Val Ala Phe Val Ala Asn Thr Leu Leu Ser Gly Ser Val  
 85                    90                    95

Thr Leu Arg Leu Thr Pro Val Gln Trp Phe Ala Arg Glu Gly Ser Ala  
 100                  105                  110

Phe Ile Thr Leu Ser Ala Ser Val Phe Ser Leu Leu Ala Ile Ala Ile  
 115                  120                  125

Glu Arg His Val Ala Ile Ala Lys Val Lys Leu Tyr Gly Ser Asp Lys  
 130                  135                  140

Ser Cys Arg Met Leu Leu Leu Ile Gly Ala Ser Trp Leu Ile Ser Leu  
 145                  150                  155                  160

Val Leu Gly Gly Leu Pro Ile Leu Gly Trp Asn Cys Leu Gly His Leu  
 165                  170                  175

Glu Ala Cys Ser Thr Val Leu Pro Leu Tyr Ala Lys His Tyr Val Leu  
 180                  185                  190

Cys Val Val Thr Ile Phe Ser Ile Ile Leu Leu Ala Val Val Ala Leu  
 195                  200                  205

Tyr Val Arg Ile Tyr Cys Val Val Arg Ser Ser His Ala Asp Met Ala  
 210                  215                  220

Ala Pro Gln Thr Leu Ala Leu Leu Lys Thr Val Thr Ile Val Leu Gly  
 225                  230                  235                  240

Val Phe Ile Val Cys Trp Leu Pro Ala Phe Ser Ile Leu Leu Leu Asp  
 245                  250                  255

Tyr Ala Cys Pro Val His Ser Cys Pro Ile Leu Tyr Lys Ala His Tyr  
 260                  265                  270

Leu Phe Ala Val Ser Thr Leu Asn Ser Leu Leu Asn Pro Val Ile Tyr

275

280

285

Thr Trp Arg Ser Arg Asp Leu Arg Arg Glu Val Leu Arg Pro Leu Gln  
 290 295 300

Cys Trp Arg Pro Gly Val Gly Val Gln Gly Arg Arg Arg Gly Thr  
 305 310 315 320

Pro Gly His His Leu Leu Pro Leu Arg Ser Ser Ser Ser Leu Glu Arg  
 325 330 335

Gly Met His Met Pro Thr Ser Pro Thr Phe Leu Glu Gly Asn Thr Val  
 340 345 350

Val

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<210> 23  
<211> 351  
<212> PRT  
<213> Homo sapiens

<400> 23

Met Val Ile Met Gly Gln Cys Tyr Tyr Asn Glu Thr Ile Gly Phe Phe  
 1 5 10 15

Tyr Asn Asn Ser Gly Lys Glu Leu Ser Ser His Trp Arg Pro Lys Asp  
 20 25 30

Val Val Val Val Ala Leu Gly Leu Thr Val Ser Val Leu Val Leu Leu  
 35 40 45

Thr Asn Leu Leu Val Ile Ala Ala Ile Ala Ser Asn Arg Arg Phe His  
 50 55 60

Gln Pro Ile Tyr Tyr Leu Leu Gly Asn Leu Ala Ala Ala Asp Leu Phe  
 65 70 75 80

Ala Gly Val Ala Tyr Leu Phe Leu Met Phe His Thr Gly Pro Arg Thr  
 85 90 95

Ala Arg Leu Ser Leu Glu Gly Trp Phe Leu Arg Gln Gly Leu Leu Asp  
 100 105 110

Thr Ser Leu Thr Ala Ser Val Ala Thr Leu Leu Ala Ile Ala Val Glu  
 115 120 125

Arg His Arg Ser Val Met Ala Val Gln Leu His Ser Arg Leu Pro Arg  
130 135 140

Gly Arg Val Val Met Leu Ile Val Gly Val Trp Val Ala Ala Leu Gly  
145 150 155 160

Leu Gly Leu Leu Pro Ala His Ser Trp His Cys Leu Cys Ala Leu Asp  
165 170 175

Arg Cys Ser Arg Met Ala Pro Leu Leu Ser Arg Ser Tyr Leu Ala Val  
180 185 190

Trp Ala Leu Ser Ser Leu Leu Val Phe Leu Leu Met Val Ala Val Tyr  
195 200 205

Thr Arg Ile Phe Phe Tyr Val Arg Arg Arg Val Gln Arg Met Ala Glu  
210 215 220

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Gly Gln Val Val Leu Leu Asp Gly Leu Gly Cys Glu Ser Cys Asn  
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Val Leu Ala Val Glu Lys Tyr Phe Leu Leu Leu Ala Glu Ala Asn Ser  
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Leu Val Asn Ala Ala Val Tyr Ser Cys Arg Asp Ala Glu Met Arg Arg  
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Thr Phe Arg Arg Leu Leu Cys Cys Ala Cys Leu Arg Gln Ser Thr Arg  
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